

PATENT SPECIFICATION

(11) 1 278 149

1 278 149

DRAWINGS ATTACHED

- (21) Application No. 28524/70 (22) Filed 12 June 1970
 (31) Convention Application No. 12831 (32) Filed 21 Aug. 1969 in
 (33) Switzerland (CH)
 (45) Complete Specification published 14 June 1972
 (51) International Classification F23D 5/04; F23C 3/00; F23L 1/00
 (52) Index at acceptance
 F4T A8 H3A H5A3 H5C
 F4W 45C



(54) OIL STOVE WITH RECTANGULAR VAPORIZING BURNER

(71) We, V. GLUTZ - BLOTZHEIM NACHFOLGER AG., a Swiss Body Corporate, of 13 Segetzstrasse, Solothurn, Switzerland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an oil stove with vaporization burner for fuel oil or kerosene.

Rectangular vaporization burners, i.e. rectangular in shape, have been known for some time. As a result of their elongated shape they make possible the design of flat oil stoves which project as little as possible from the wall. However, these burners are very sensitive in their reaction to an uneven supply of combustion air. This property has been particularly evident when a blower has been provided for the supply of combustion air, or when a limiting device for the combustion air has been fitted upstream of the vaporizing burner.

The rectangular vaporization burners known heretofore are also very sensitive in their reaction to so-called by-passed secondary air, which results in particular in an unsteady and branching flame. This is specially troublesome in modern oil stove designs with an inspection window. The by-passed secondary air enters at the joint between burner and combustion chamber. This joint cannot be adequately sealed by bolting, and welding has proved too expensive in series manufacture.

According to the present invention there is provided an oil stove including a vaporising burner chamber for fuel oil or kerosene, and an air baffle plate, wherein in use the upper portions of the vaporizing burner chamber walls form a sealing plate in sealing engagement with the stove sides and a floor portion which constitutes the burner bottom is suspended above the air baffle plate of substantially flat construction provided with two longitudinal rows of air holes in the vicinity of the vapor-

izing burner chamber, and wherein the chamber is rectangular in horizontal cross-section, and has vertical chamber walls bent so as to form, at an upper portion, a re-entrant portion such that the cross-sectional area of the residual neck opening so formed, is smaller than either the area of the burner bottom or the area of the sealing plate.

A constructional embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawing, wherein:—

Figure 1 shows a vertical section along the line I—I of Figure 2,

Figure 2 shows a sectional view along the line II—II of Figure 1, and

Figure 3 is a horizontal section along the line III—III of Figure 1.

Referring to said attached drawing the sealing plate 4 of a vaporization burner chamber 2 is connected in sealing air-tight engagement with the oil stove casing 1 by being bolted or spot welded along the edges 3. (Figures 1 and 2). The burner chamber 2 is of substantially open box-like construction. The chamber is rectangular by which is meant that its horizontal cross-section is rectangular as shown in Figure 3 when taken in a longitudinal plane along the line III—III of Figure 1. The upper portions of the two longitudinal walls of the chamber 2 are inwardly bent to form a re-entrant section, the upper portion of the section being outwardly bent to form the said sealing plate 4. The cross-sectional area of the residual neck opening formed by the re-entrant section is smaller than either the area of the burner bottom or the area of the sealing plate. The transverse end walls of the burner chamber are substantially of flat construction except for their upper end portions, which are similarly outwardly bent to complete the said sealing plate 4. The lower vertical portions of the longitudinal walls are provided with two rows of equally spaced circular holes 10 of similar

[Price 25p]

diameter extending the full length of the said walls. According to the invention, the sealing plate 4 is an integral part of burner chamber 2. The burner chamber and sealing plate therefore form a single piece. A floor portion comprising the chamber bottom 5 is suspended above an air baffle plate 6 so that the plate 6 is immediately below bottom 5. The plate 6 (Figure 2) is provided with air holes 7 (Figure 3). These holes 7 in air baffle 6 are arranged in two rows, one row being provided on either longitudinal side of burner 2. This ensures a completely even supply of combustion air to air holes 10 of burner chamber 2, irrespective of whether the air is supplied by a blower 8 or through a combustion air limiting valve 9 into the conduit formed, between the air baffle 6 and casing wall 1 at the base of the stove (Figures 1 and 2). Preferably the spacing of the holes in air baffle plate 7 is the same as the longitudinal spacing of air holes 10 of burner chamber 2. An advantage of the air baffle plate is that when the right distance is chosen between burner chamber bottom 5 and air baffle plate 6 the burner chamber 5 is kept at just the right temperature required for evaporation of the necessary amount of fuel without deposits being able to form and without insulation of the burner bottom 5 being necessary.

A further advantage is that in providing an integral sealing plate with the burner chamber it removes the necessity to form an airtight seal in a connecting joint between a sealing plate and the burner chamber, which is difficult to continually maintain.

WHAT WE CLAIM IS:—

1. An oil stove including a vaporizing burner chamber for fuel oil or kerosene, and an air baffle plate, wherein in use, the upper

portions of the vaporizing burner chamber walls form a sealing plate in sealing engagement with the stove sides and a floor portion which constitutes the burner bottom is suspended above the air baffle plate of substantially flat construction provided with two longitudinal rows of air holes in the vicinity of the vaporizing burner chamber, and wherein the chamber is rectangular in horizontal cross-section and has vertical chamber walls bent so as to form, at an upper portion, a re-entrant portion such that the cross sectional area of the residual neck opening so formed, is smaller than either the area of the burner bottom or the area of the sealing plate.

2. A stove as claimed in Claim 1, wherein the sealing plate and the burner chamber are formed from a single piece of material.

3. A stove as claimed in Claim 1 or Claim 2, wherein the vaporizing burner chamber is of box-like construction.

4. A stove as claimed in any one of Claims 1 to 3, wherein the spacing of air holes in the air baffle plate is the same as the longitudinal spacing of air holes provided in the burner chamber.

5. A stove as claimed in any one of Claims 1 to 4, wherein combustion air is supplied in a conduit below the air baffle plate by way of a blower or a combustion air limiting device.

6. An oil stove substantially as described herein and illustrated in the accompanying drawing.

For the Applicants:
MATTHEWS, HADDAN & CO.,
Chartered Patent Agents,
33 Elmfield Road,
Bromley, Kent.

